Contents

ELECTRONICS AND OPTICS

Ion beam sputter deposition of low loss Al_2O_3 films for integrated optics . . . 1
S. M. Arnold and B. E. Cole (Minneapolis, MN, U.S.A.)

Electrical and structural properties of concentrated Cr(Al) thin films 11
J. Sonntag, R. Voigtmann and J. Edelmann (Dresden, G.D.R.)

Some electrical properties of the GaAs–anodic oxide interface on the basis of measurements of the capacitance–voltage and conductance–voltage characteristics of metal–oxide–semiconductor structures 21
St. Łoś and St. Kochowski (Gliwice, Poland)

Structural, optical and electrical properties of evaporated and sputtered Au–Cr thin films 29
P. Gadenne (Paris, France), C. Sella, M. Gasgnier (Meudon Bellevue, France) and A. Benhamou (Velizy-Villacoublay, France)

Electroluminescence spectra of discontinuous conducting films 49
M. Bischoff, V. Olt and H. Pagnia (Darmstadt, F.R.G.)

Exposure characteristics of electron-beam-induced silver doping and its application to grating device fabrication in chalcogenide glass films 55
Y.-C. Liang (Tokyo, Japan), H. Yamanaka (Ibaraki, Japan) and K. Tada (Tokyo, Japan)

Dielectric relaxation in Co–Al_2O_3 composite films 67
K. Brantervik and G. A. Niklasson (Gothenberg, Sweden)

Au–Ge/In ohmic contacts to n-type GaAs 77
W. O. Barnard (Pretoria, South Africa) and A. J. Willis (London, U.K.)

IR response of phthalocyanine thin films to nitrogen dioxide 83
K. F. Schoch, Jr., and T. A. Temofonte (Pittsburgh, PA, U.S.A.)

Optical constants of $Cd_{1-y}Mn_yTe$ thin films 91
I. Miotkowski and S. Miotkowska (Warsaw, Poland)

The effect of light intensity and temperature on the transient photoconductivity in thin a-$Se_{80}Te_{20}$ films 99
S. K. Tripathi and A. Kumar (Kanpur, India)

METALLURGICAL AND PROTECTIVE COATINGS

Rapid thermal annealing of arsenic-implanted silicon: a review 109
A. Feygenson and J. N. Zemel (Philadelphia, PA, U.S.A.)

Plasma-assisted chemical vapour deposition of TiN and TiC on steel: properties of coatings 139
T. Arai, H. Fujita and K. Oguri (Aichi-gun, Japan)

TiC and TiN coatings formed on Si_3N_4–TiC composite ceramics by chemical vapour deposition. 149
D. W. Kim, Y. J. Park, J. G. Lee and J. S. Chun (Seoul, South Korea)

Characterization and microhardness measurement of electron-beam-evaporated alumina coatings 163
A. K. Dua, V. C. George and R. P. Agarwala (Bombay, India)

Studies of some properties of mechanical stress in a-Si:H, a-SiN_x:H and a-Si:H/a-SiN_x:H heterojunction films 173
W. Wang and K. Liao (Gansu, China)

Mechanical stresses in low pressure chemically vapour deposited silicon films 181
V. M. Koleshko, V. F. Belitsky and I. V. Kiryushin (Minsk, U.S.S.R.)

PREPARATION AND CHARACTERIZATION

Topographical features of N_2^+-sputtered metal sandwiches: their correlation with Auger depth resolution 193
M. Tanemura and F. Okuyama (Nagoya, Japan)

Dispositif original de mesures des facteurs de réflexion d'une couche métallique épaisse en lumière polarisée. 211
R. Philip, B. Vidal and R. Fraisse (Marseilles, France)

Film thickness and composition determination for binary alloys using backscattered electrons. 217
D. J. Wilson and A. E. Curzon (Burnaby, British Columbia, Canada)

Sputter deposition of thin tantalum layers and low temperature interactions between tantalum and SiO_2 and tantalum and silicon 227
P. Gallais, J. J. Hantzpergue, J. C. Remy (Angers, France) and D. Roptin (Nantes, France)

Preparation of ZnTe thin films using a simple two-stage process 237
B. M. Basol and V. K. Kapur (Inglewood, CA, U.S.A.)

The effects of oxygen concentration in sputter-deposited molybdenum films . 243
T. T. Bardin, J. G. Pronko (Palo Alto, CA, U.S.A.), R. C. Budhani, J. S. Lin and R. F. Bunshah (Los Angeles, CA, U.S.A.)

Spray deposition of $TbCl_3$-doped In_2O_3 photoluminescent films 249
A. Ortiz, M. Garcia, S. Lopez (Coyoacán, Mexico) and C. Falcony (Lindavista, Mexico)

X-ray line profile analysis studies on SnSe thin films deposited at different substrate temperatures 257
T. S. Rao, B. K. S. Ray and A. K. Chaudhuri (Kharagpur, India)

Mechanics of film formation during the spray pyrolysis of tin oxide 265
W. M. Sears and M. A. Gee (Burnaby, British Columbia, Canada)

Physico-chemical properties of photo-CVD silicon nitride thin films 279
M. Berti (Padova, Italy), M. Meliga, G. Rovai, S. Stano and S. Tamagno (Torino, Italy)

Effect of deposition parameters on the deposition characteristics of chemically vapour deposited $PbTiO_3$ 291
S.-G. Yoon and H.-G. Kim (Seoul, South Korea)

Amorphous PbSe films: growth and properties 303
L. P. Biró, R. M. Cândea, G. Borodi, A. Darabont, P. Fitori, I. Bratu and D. Dădârlat (Cluj-Napoca, Romania)

Vanadium dioxide films grown from vanadium tetraisopropoxide by the sol–gel process 317
K. R. Speck, H. S.-W. Hu, M. E. Sherwin and R. S. Potember (Laurel, MD, U.S.A.)

LANGMUIR–BLODGETT AND RELATED FILMS

Langmuir–Blodgett films of merocyanine j aggregates: preparation and structural change on irradiation by laser light 323
T. Kawaguchi and K. Iwata (Tokyo, Japan)

The effects of thickness on the electrical conduction of thin poly(1-trimethylsylil-1-propyne) films 337
S. Hirota, U. Itoh (Ibaraki, Japan) and K. Takada (Kyoto, Japan)

GENERAL FILM BEHAVIOUR

Ion beam mixing of silver–magnesium oxide multilayers. 347
G. Fuchs, M. Treilleux and P. Thevenard (Villeurbanne, France)

A thermal spike analysis of low energy ion activated surface processes 359
C. M. Gilmore, A. Haeri and J. A. Sprague (Washington, DC, U.S.A.)

LETTERS

A highly conducting tetrathiafulvalene Langmuir–Blodgett film L97
A. S. Dhindsa, M. R. Bryce, J. P. Lloyd and M. C. Petty (Durham, U.K.)

The growth of single-crystal films of silver on rock salt by ion-plating L101
R. Zimmerman, E. Broitman and D. Latorre (Buenos Aires, Argentina)

Deuterium ion bombardment behaviour of alumina coatings L107
V. C. George, A. K. Dua and R. P. Agarwala (Bombay, India)

AUTHOR INDEX 369